SONY

3-751-222-21 (1)

Radio Cassette Player

WM-F702

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

Owner's Record

The model number is located at the rear and the serial number is located in the inside of the cassette holder. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. WM-F702 Serial No. _____

Features

- Stereo headphones with remote controller with which you can operate the unit in your hand.
- The synthesized tuner can memorize 7 stations each for FM and AM.
- Dolby B NR system reduces tape hiss noise during playback.
- EX DBB (Dynamic Bass Boost) function for powerful mega bass sound.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna.
Relocate the equipment with respect to the receiver.
Move the equipment away from the receiver.
Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Precautions

- Operate the unit only on 1.5V DC.
  For AC operation or car battery operation, use the accessories recommended for the unit.
- Do not give a shock to nor drop the unit. Doing so may cause malfunction of the unit.
- Should any solid object or liquid fall into the unit, remove the battery or disconnect the AC power adaptor and have the unit checked by qualified personnel before operating it.
- Do not leave the unit in a location near heat sources, or in a place subject to direct sunlight, sand or excessive dust, moisture, rain, mechanical shock, or in a car with its windows closed.
- If the unit has not been used for a long time, set it in the playback mode and warm it up for a few minutes before inserting a cassette.

About the headphones

- Avoid listening with your headphones:
  — **while driving, cycling, etc.**
  — for an extended time at a high volume.
- Remember not to disturb other people with the sound coming from your headphones.
- To obtain optimum sound, keep the plug of your headphones clean by wiping it with a dry, soft cloth.
- Never blow on the earpieces.

About the headphones with remote controller

- The supplied headphones with remote controller is to be used only with this unit.
- This unit cannot be operated with headphones supplied to other models though they have the same plug as the headphones supplied to this unit.
  Also other models cannot be operated with the headphones supplied to this unit. (But sound can be heard in either case.)

Notes on the display

The digital display will become unstable if you place the unit in a location which is extremely hot or cold.
Do not place the unit in
— a place subject to direct sunlight or ultraviolet light (for example, at the seaside, etc.).
— a temperature below 0°C or over 40°C. In a hot place, the display will be seen as 188.8, and in a cold place, the display's flickering may become slower. (However, this is not a trouble. Use the unit in normal temperature.)
— a damp place (for example, in a bathroom, etc.). It will cause malfunction.
— a place subject to mechanical vibration or shock.

Note on the rechargeable battery

Never peel the polyvinyl off the rechargeable battery as it could cause short circuits.

Note on cassettes longer than 90 minutes

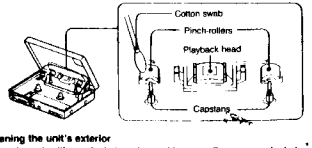
The use of cassettes longer than 90 minutes is not recommended except for long continuous playback.

If you have any question or problem concerning your unit that is not covered in this manual, please consult the nearest Sony dealer.

Cleaning

Cleaning the tape head

Clean the tape head after every 10 hours of use to enjoy optimum stereo sound. Moisten a cotton swab or a soft cloth with alcohol and wipe the head, the pinch-rollers and the capstans.

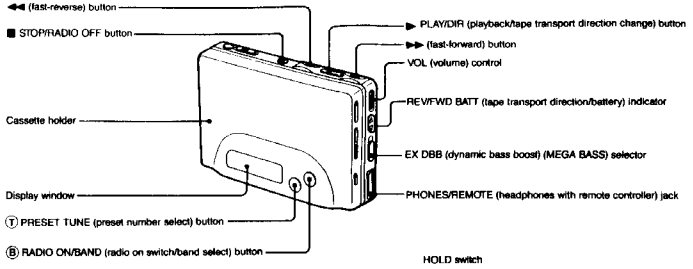


Cleaning the unit's exterior

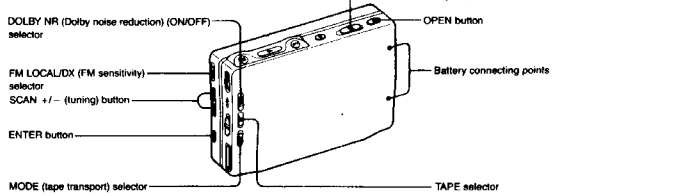
Clean the unit with a soft cloth moistened in water. Do not use alcohol, benzine or thinner.

Parts Identification

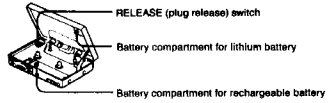
Unit


◀◀ (fast-reverse) button
■ STOP/RADIO OFF button
▶ PLAY/DIR (playback/tape transport direction change) button
▶▶ (fast-forward) button
VOL (volume) control
REV/FWD BATT (tape transport direction/battery) indicator
Cassette holder
EX DBB (dynamic bass boost) (MEGA BASS) selector
Display window
PHONES/REMOTE (headphones with remote controller) jack
Ⓣ PRESET TUNE (preset number select) button
Ⓑ RADIO ON/BAND (radio on switch/band select) button

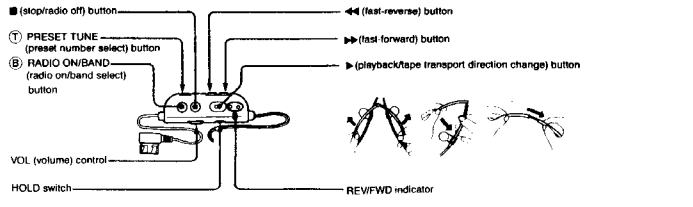
HOLD switch
Slide the HOLD switch in the direction of HOLD to avoid accidental operation of the unit and remote controller. Even if the switch is slid to HOLD on the unit, you can operate the unit with the remote controller, and even if the switch is slid to HOLD on the remote controller, you can operate the unit on the buttons on the unit.



Inside the unit

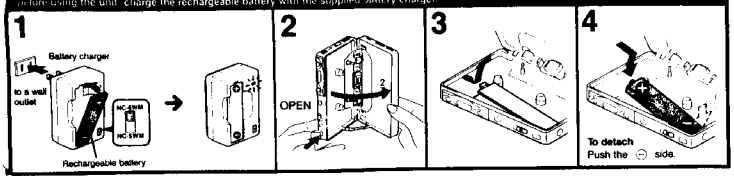


Stereo headphones with remote controller


■ (stop/radio off) button
◀◀ (fast-reverse) button
Ⓣ PRESET TUNE (preset number select) button
▶▶ (fast-forward) button
Ⓑ RADIO ON/BAND (radio on/band select) button
▶ (playback/tape transport direction change) button
VOL (volume) control
HOLD switch
REV/FWD indicator

Using with a Rechargeable Battery

(before using the unit, charge the rechargeable battery with the supplied battery charger)



High speed charging (50% charge in 10 minutes)	After the charge indicator blinks rapidly for several (approx. 10) seconds (checking the remaining amount of power), it blinks slowly and high speed charging starts*. 10 minutes later, the indicator will light steadily and charging starts in the normal speed mode. At this time, the rechargeable battery is 50% charged.
Full charge	Leave the charger for approx. 20 minutes further until the indicator goes off. (Total charging time: approx. 30 minutes)

*** If the indicator lights steadily instead of slow blinking after several (approx. 10) seconds of rapid blinking**

This shows that the power in the rechargeable battery still remains. If this happens, charging is performed in the normal speed mode instead of the high speed mode. Charging will be completed when the indicator goes off. Charging time varies according to the remaining amount of power (approx. 40 min.)

When you use an optional rechargeable battery

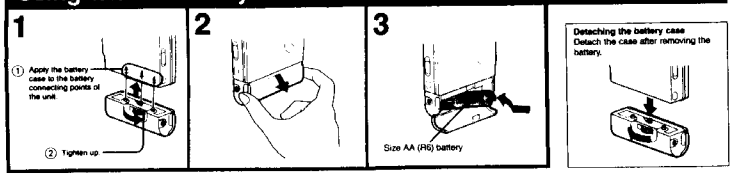
Sony NC-6WM and NC-5WM rechargeable batteries are available.
NC-6WM — The same procedure as the supplied rechargeable battery.
NC-5WM or NC-6WM at a normal speed
— Set the selector on the battery charger to NC-5WM.
You cannot charge the battery at a high speed. The indicator lights up and the battery will be charged in approx. 40 minutes. (The indicator will go off.)

Notes

- Be sure to plug in the battery charger after inserting the rechargeable battery, otherwise the battery will not be charged properly.
- The battery may become warm during charging, but this is not a problem.
- Only the NC-5WM and NC-6WM can be used with the supplied battery charger.
- Do not use the battery charger near a receiver. If you do, it may interfere with the receiver.
- Unplug the battery charger from the wall outlet when the indicator goes off. Overcharging (for more than 20 hours) may damage the battery.
- If the rechargeable battery is new or it has not been used for a long time, it may not be charged completely. (The playing time is shorter.) This is not a problem and the battery will be charged completely after it is used several times.
- If the charge indicator repeats rapid blinking when the selector is set to NC-6WM, or if the indicator blinks when the selector is set to NC-5WM, the rechargeable battery should be replaced with a new one.

Concerning the battery life, see "Specifications".

Using with a Battery


1
① Apply the battery case to the battery connecting points of the unit.
② Tighten up.
2
3
Size AA (R6) battery
Detaching the battery case
Detach the case after removing the battery.

Notes

- Do not short-circuit the terminal of the battery case when installing the battery.
- Insert the battery with correct polarity.
- When the unit is not to be used for a long period of time, remove the battery to avoid damage caused by battery leakage and corrosion.

When the battery becomes weak

When the battery becomes weak, the BATT indicator will glow faintly and the playback sound will be distorted, or unstable. In this case, replace the battery or recharge the battery when using the rechargeable battery. Concerning the battery life, see "Specifications".

For prolonged playback

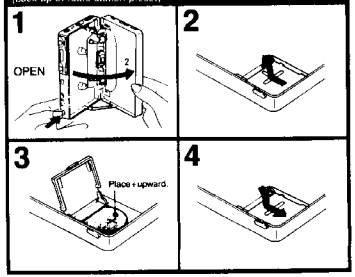
With the following methods, the unit can be played back continuously for a long time.

- Insert the rechargeable battery and a dry battery. Approximately 10 hours of playback can be expected when using the NC-6WM rechargeable battery and the AM3 (N) Sony alkaline battery.
- Attach the battery case and connect an optional power cord. See "Using External Power Sources".

If the battery compartment lid is detached by an accidental drop, excessive force, etc., attach it as shown in the illustration.

Installing a Lithium Battery

(back-up of radio station preset)



Before using the unit for the first time, install the supplied lithium battery, then install the rechargeable battery or a battery. When the lithium battery power runs out, the radio stations you have stored will be erased. In this case, memorize the stations again after changing the batteries. (One lithium battery lasts for about a year.)

To replace the lithium battery

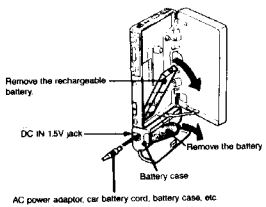
1 Remove the rechargeable battery, dry battery and the lithium battery, then leave the unit for 5 minutes.
2 Install a new lithium battery.
3 Install the rechargeable battery or dry battery.

Note

If you use the unit without the lithium battery installed, the tuner may malfunction. In this case, install the lithium battery following the procedures above.

If the lithium battery compartment lid is detached by an accidental drop, etc., attach it as shown in the illustration.

Using External Power Sources


Remove the rechargeable battery.
DC IN 1.5V jack
Remove the battery
Battery case
AC power adaptor, car battery cord, battery case, etc.

Attach the battery case and connect a power cord such as that of the optional AC power adaptor to the DC IN jack.

Note

Remove the rechargeable battery or the battery if it is installed before using the unit on an external power source. Otherwise, the batteries will be damaged.
Concerning external power sources, see "Specifications".

Specifications

Radio section

Frequency range
FM 87.9—107.9 MHz
AM 530—1,670 kHz
Antenna
FM: Headphone cord antenna
AM: Built-in ferrite bar antenna

Tape player section and general

Frequency response (DOLBY NR off)
15 — 18,000 Hz
Output
Headphones (PHONES/REMOTE) jack
load impedance 8— 300Ω
Power output
5 mW + 5 mW at DC operation, 16Ω
Power requirements
1.5 V DC
Rechargeable battery
One size AA (R6) battery
DC IN 1.5 V jack accepts
Sony AC-D1M power adaptor (optional) for use on 120 V AC, 60 Hz
Sony EBP-10 battery case (optional) for use with two size AA (R6) batteries
Sony DCC-70 (optional) for use with 12 V car battery
Battery life

Battery	Playback	Radio Reception
Rechargeable NC-6WM fully charged	Approx. 3 hours	Approx. 4 hours
Sony SUM-3 (NS)	Approx. 1.5 hours	Approx. 2.5 hours
Sony AM3 (N)	Approx. 6 hours	Approx. 10 hours
Rechargeable NC-6WM with Sony AM3 (N)	Approx. 10 hours	Approx. 12 hours

For maximum performance we recommend the use of alkaline batteries.
Dimensions
Approx. 104.8 × 72.2 × 23.3 mm (w/h/d) excl. projecting parts and controls ($4^{1}/_{4} \times 2^{7}/_{8} \times {}^{15}/_{16}$ inches)
Approx. 106.4 × 74.6 × 25.4 mm (w/h/d) incl. projecting parts and controls ($4^{1}/_{4} \times 3 \times 1$ inches)
Weight
Approx. 190 g (6.7 oz) incl. rechargeable battery, excl. other accessories
Accessories supplied
Battery case (1) Battery charger (1)
Rechargeable battery (1) Lithium battery (1)
Stereo headphones with remote controller (open-air type, 1)
Plug adaptor (1) Carrying case (1)

Design and specifications subject to change without notice.

Optional accessories

Battery case EBP-10, AC power adaptor AC-D1M, Car battery cord DCC-70, Lithium battery CR 2016

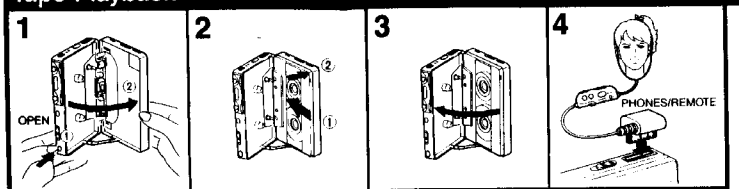
Your dealer may not handle some of the optional accessories listed above. Please ask the dealer for detailed information.

Note

Use only the recommended AC power adaptor or a car battery cord manufactured by Sony. Polarity of the plug of other manufacturers may be different.

Polarity of the Sony plug

Tape Playback



When adjusting the volume with the unit, set the VOL control of the remote controller to MAX, and when adjusting it with the remote controller, set the VOL control of the unit to around 6.

Selectors for tape operations

MODE

Playing back both sides of the cassette once When playback starts from the reverse side of the cassette, the unit will be shut off at the end of the tape.	MODE
Playing back both sides of the cassette repeatedly.	MODE

TAPE

For normal (TYPE I) tapes	TAPE NORMAL
For CrO2 (TYPE II) or metal (TYPE IV) tapes	TAPE CrO2 / METAL

EX DBB

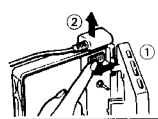
Listening to powerful and heavy sound Set EX DBB (mega bass) to the desired position. Bass is boosted in the order of NORM, MID, and MAX.	EX DBB MAX MID NORM

DOLBY NR

For Dolby B NR processed tapes	DOLBY NR ON

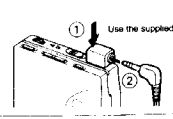
Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

To remove the headphones from the unit



While sliding the switch in the direction of the arrow, pull the plug out.

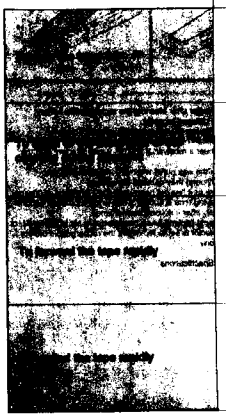
To connect optional headphones



Use the supplied plug adaptor.

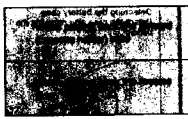
To remove the plug adaptor, proceed as in "To remove the headphones from the unit."

Tape Operation



Operating the unit	Operating the unit with the remote controller
■ STOP/RADIO OFF	■
▲ PLAY/DIR	▲
The tape will be forwarded regardless of the direction in which the tape is being played back. If you press the ▲ button during playback, playback of the other side of the cassette will automatically start when the tape comes to the end. (Skip-reverse function)	
The tape will be rewound regardless of the direction in which the tape is being played back. If you press the ▼ button during playback, playback will automatically start when the tape comes to the beginning. (Auto-play function)	

Tape direction indicator



Playback	Fast forward	Rapid rewinding
Lights up REV FWD	Flickers REV FWD	Flickers Lights up REV FWD
Lights up REV FWD	Flickers REV FWD	Lights up Flickers REV FWD

About a Beep Tone

When you press the button or while the unit is operating, a beep will be heard to let you know which operation is now being done.

During tape playback

Operation	Beep pattern
FWD side* starts playback	—
REV side starts playback	— —
At the tape end	———
Fast-forward/reverse	—
Fast-forward during playback (Skip-reverse)	—➡ · · (during winding)
Fast-reverse during playback (Auto-play)	➡ · · · · (during winding)

*Cassette holder side of the tape

The sequence of the beep pattern listed in the table shows the various playing modes of this unit. When you use the skip-reverse function, for example, the sequence is as follows:
The ▲ button is pressed during playback "—➡ During winding "· · ·" ➡ At the end of the tape "———" ➡ FWD side starts playback "—" or REV side starts playback "— —"

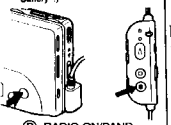
Notes

- Do not operate the unit near an AM receiver as it may interfere with the receiver.
- If the VOL control on the unit is set over 8, the effect of the EX DBB selector may be decreased.
- While playing back hard and stressed sound, the EX DBB (mega bass) sound may be distorted. In this case, set the EX DBB switch to NORM or MID.
- The volume cannot be turned down completely if you adjust the volume with the remote controller.
- If you press the ▲ or ▼ button during playback, the playback automatically starts after the tape is fully wound. When you do not use the unit after the tape is wound, be sure to press the ■ button.
- If you press the ▲ or ▼ button in the stop mode, the tape automatically stops after the tape is fully wound.

Radio Reception

Connect the headphones before listening to the radio. (See step 4 of "Tape Playback.")

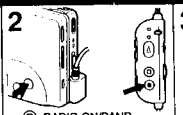
1 Install the supplied lithium battery before using the unit for the first time. (See "Installing a Lithium Battery.")



Ⓑ RADIO ON/BAND

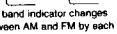
Figures will appear in the display window.

2



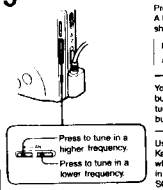
Ⓑ RADIO ON/BAND

Select the desired band.



The band indicator changes between AM and FM by each pressing.

3 Tune in the desired station.



Three ways to scan the stations

—One step scan

Press the SCAN button repeatedly. You can scan a desired station manually. A beep sound follows each press and the frequency changes in the steps shown below.

	Frequency step
FM	0.2MHz
AM	10kHz

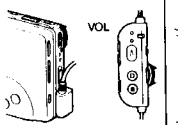
—Seeking scan

You can automatically scan a station with this function. Press the SCAN button for about one second to start scanning. When the desired station is tuned in, press the SCAN button. To continue scanning, press the SCAN button again for about one second.

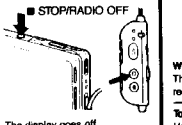
—Fast scan

Use this function to rapidly scan a station.
Keep the SCAN button pressed. Fast scanning starts. Release the button when the scanning comes near a desired frequency. The scanning continues in the seeking scan mode. When the desired station is tuned in, press the SCAN button again.

4

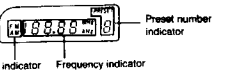


To turn off the radio



The display goes off.

Display Window



When batteries become weak while listening to the radio

The display on the window goes off. If this happens, replace or recharge the battery.

To improve FM/AM receiving sensitivity

Usually set the FM LOCAL/DX selector to DX. If a very strong station signal causes noise, set it to LOCAL. The noise will be reduced.

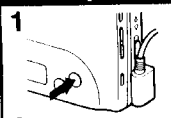
Note

Be sure to remove the cassette tape if it has a metallic cassette shell or metallic labels. Such cassettes may cause interference or difficulty in tuning.

Memory Preset Tuning

Use the buttons on the unit when memorizing. You cannot memorize stations with the remote controller.

1



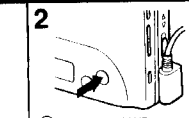
Ⓑ RADIO ON/BAND

Figures will appear

Example

Try to preset FM 104.1 MHz in preset 4.

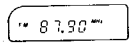
2



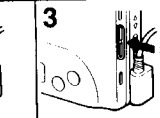
Ⓑ RADIO ON/BAND

Select the desired band.

Press the button until FM is displayed in the display window.

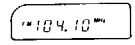


3

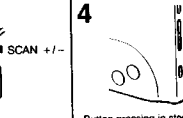


Tune in the desired station.

Press the + or – button to tune in 104.1 MHz.

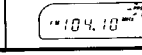


4

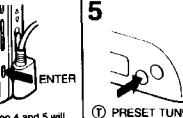


Button pressing in step 4 and 5 will be canceled if you do not go to the next step within four seconds.

Flickers for about 4 seconds.



5



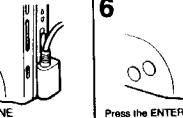
Ⓣ PRESET TUNE

Display the preset number on which you want to store.

Press the button until preset number 4 comes up in the display window.

Flickers about another 4 seconds

6



Press the ENTER button immediately to store the desired station.

The "PRESET" indication and the preset number stop flickering to show that the station has been stored.

Repeat steps 1 to 6 for both AM and FM.
You can store a total of 14 stations (7 stations each for FM and AM), one on each preset number.

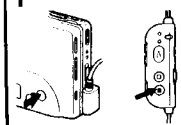
To turn off the radio, press the ■ STOP/RADIO OFF button.

When flickering stops before you store the stations

The indicators continue to flicker only for four seconds. If the flickering stops before you store a station, repeat steps 4 through 6.

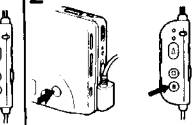
To Tune in a Preset Station

1



Ⓑ RADIO ON/BAND

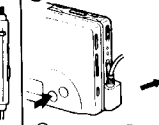
2



Ⓑ RADIO ON/BAND

Select the desired band.

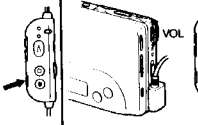
3



Ⓣ PRESET TUNE

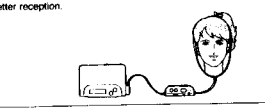
Select the desired preset number.

4



To turn off the radio, press the ■ STOP/RADIO OFF.

FM: Since the headphone cord serves as an FM antenna, extend it for better reception.



AM: Since the reception is affected by the direction of the unit, rotate the unit horizontally for optimum reception.